

SPACE FLORIDA



2018 ANNUAL REPORT



ANNUAL REPORT 2018
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LETTER TO THE STAKEHOLDERS

AUGUST 31, 2018

Dear Stakeholder:

There is no doubt that today Florida is playing a historic and significant role in the tremendous growth we're seeing in the commercial space and aerospace industries. Space and aerospace companies regularly note our highly trained workforce, proven infrastructure and great location as the main reason they move to or expand in Florida, and Space Florida is the driving force in recruiting these companies to the Sunshine State.

1.6M JOBS My goal every day is to make Florida first for jobs by cutting taxes and creating an environment where businesses can grow and succeed. Since I became Governor, Florida businesses have created nearly 1.6 million jobs, and our private-sector job growth has consistently exceeded the nation. Florida's remarkable economic turnaround results from our efforts to diversify our economy and cut taxes more than 100 times to save Florida families and businesses more than \$10 billion.

Over the past seven-and-a-half years, we've made tremendous progress supporting high skill, high wage jobs across the space and aerospace sector. In December last year, I had the opportunity to lead a trade mission in Israel where I highlighted the successful Florida-Israel Innovation Partnership between Space Florida and Israel, which has resulted in Florida and Israel each investing \$1 million annually to support research, development and aerospace projects. Since 2011, Space Florida has supported job growth in Florida by helping many companies create jobs or move to Florida, including Boeing, Blue Origin, Embraer, Harris, Lockheed Martin, Northrop Grumman and OneWeb Satellites. These projects have resulted in thousands of jobs for Florida families on the Space Coast.

After five decades of space age development, Florida remains one of the nation's centers for technology and manufacturing industries and still serves as the home of one of the world's most significant spaceports. With Space Florida's leadership, Florida will continue to be the best place for space and aerospace companies to locate, grow, and thrive, making Florida the global leader in space commerce. We look forward to Space Florida helping us in our mission to be first in job growth.

Sincerely,



Rick Scott
Governor



RICK SCOTT
Governor



MESSAGE FROM SPACE FLORIDA CHAIRMAN OF THE BOARD

In Performance Year (PY) 2018, Space Florida's Board of Directors continued to see the evolution and growth of Florida's aerospace industry and spaceports. Over the years, we've witnessed the transformation of SLC-46 into one of the most capable launch complexes at the Cape Canaveral Spaceport. As one example of this capability, in late August 2017, Orbital ATK launched its Minotaur rocket from SLC-46.

From SpaceX's first-ever, spectacular Falcon Heavy launch and twin rocket boosters return landing, to a visit from Vice President Mike Pence and the National Space Council, the State and Space Florida have continued our mission of making Florida the Place for Space.

We also watched manufacturing facilities rise as Blue Origin and OneWeb Satellites add to the industry transition from government-led to commercial-focused. By this time next year, both facilities totaling a combined 890,000 square feet will be up and operational.

I want to personally thank Governor Rick Scott, his economic development team including DEO Director Cissy Proctor, and the Florida Department of Transportation for their time and dedication in embracing and promoting Florida's aerospace industry, legacy and future.

Additionally, I want to congratulate and thank our board members and our outstanding staff led by Frank DiBello for their dedicated and engaged service to our board and mission throughout the past year. Finally, a special thanks to retiring board member Julius Davis for his service to the board.

We are pleased to share highlights of the past year with you in our annual report.

Sincerely,



William T. Dymond, Jr.
Chairman, Space Florida

SPACE FLORIDA



WILLIAM T. DYMOND, JR.
Chairman, Space Florida

LEADERSHIP

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LEADERSHIP

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Vice President of Administration



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Vice President, Education & Talent
Supply Chain (Retired in 2018)



JIM KUZMA
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& General Manager



BERNIE MCSHEA
Senior Vice President, Business
Development & Marketing



KEEVIN WILLIAMS
Vice President, Special Projects
& Strategic Initiatives



MARK BONTRAGER
Vice President,
Spaceport Operations



TODD ROMBERGER
Vice President,
Commercial Space



DALE KETCHAM
Vice President, Government
& External Relations



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TONY GANNON
Vice President,
Research & Innovation



MICHELE MCCARTY
Vice President, Marketing
& Communications



Along with all of my colleagues at Space Florida, I want to acknowledge the retirement of a long-time friend and contributor to the accomplishments and progress we have made during the past decade. Dr. Percy Luney retired this year after 10 years serving as Vice President of Education & Talent Supply Chain, and was responsible for leading many of our efforts in Education, Workforce and advanced STEM initiatives. His contributions and always friendly and welcoming demeanor will be missed by all of us."

—FRANK DIBELLO

SPACE FLORIDA 101

Space Florida promotes aerospace business development by facilitating business and infrastructure financing, spaceport operations, research and development, workforce development and innovative education programs. Space Florida, created in 2006, is Florida's aerospace and spaceport development authority. We were created to strengthen Florida's position as the global leader in aerospace research, investment, manufacturing, space exploration and commerce. Our mission is to retain, expand and diversify the state's aerospace industry.

FLORIDA IS HOME TO TWO FEDERAL SPACE INSTALLATIONS AT THE CAPE CANAVERAL SPACEPORT:

- 1 CAPE CANAVERAL AIR FORCE STATION (USAF)
- 2 KENNEDY SPACE CENTER (NASA)

The Cape Canaveral Spaceport remains the most active orbital launch site in the world with **19 SUCCESSFUL LAUNCHES** IN 2017

Cape Canaveral Spaceport and 45th Space Wing are targeting **48 LAUNCHES** BY 2020

During the SpaceX Falcon Heavy launch, Florida's Space Coast had **114,543 VISITORS** ON FEB 6, 2018*

Kennedy Space Center Visitor Complex receives **1-1.5M ANNUAL VISITORS****

Data from Space Florida Fast Facts July 2018 and the Space Coast Office of Tourism:
 *Deborah Webster, Space Coast Office of Tourism, data provided by AirSage and insights provided by Interimx.
 **Dr. Heidi Hatfield Edwards, Florida Institute of Technology professor and contributor to Florida's Space Coast Tourism Report, Summer 2018.

IN 2018, SPACE FLORIDA HAS ANNOUNCED:

21
SPACE AND AEROSPACE-RELATED COMPANIES

3,480
APPROXIMATE JOBS RECRUITED, RETAINED AND/OR EXPANDED

\$104,941
APPROXIMATE AVERAGE WAGE



ANNUAL OUTCOMES



THE SPACE FOUNDATION'S SPACE REPORT 2018:

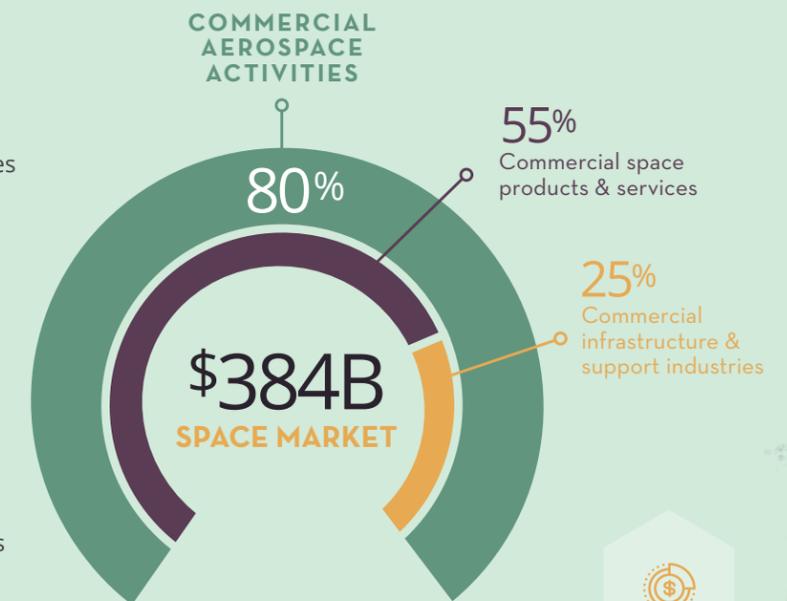
The Authoritative Guide to Global Space Activity revealed that in 2017, 80% of the global \$384 billion space market came from commercial aerospace activities. That number includes both commercial infrastructure and support industries (25%) and commercial space products and services (55%). Additionally, "in aggregate, the overall economy grew 7.4% during the year, continuing an upward trend established more than a decade ago."

In Performance Year 2018, Space Florida was able to recruit, retain and/or expand 21 space and aerospace-related companies and approximately 3,480 jobs averaging a \$104,941 annual salary. FY2017 saw 27 space and aerospace-related companies recruited, retained and/or expanded.

Additionally, Space Florida implemented 27 strategies noted in the "Florida Strategic Plan for Economic Development" in PY2018. The annual number of research projects, partnerships and grants supported by Space Florida in PY2018 was 42.

Funding appropriated by the State of Florida is vital to our efforts, providing us the leverage we need to enable new business development each year. Because of the State's trained workforce, and availability of capital and infrastructure, Florida continues to attract and expand aerospace and high-tech companies. Space Florida's ongoing efforts maintain that Florida is the Place for Space.

We are pleased to share Space Florida's top projects and outcomes for PY2018 in the following pages.



“The relationship between Space Florida and United Launch Alliance goes back many decades with innovative financing tools to support items such as launch pad development, as well as business friendly contract structures. As ULA continues to provide trusted and reliable launch services for commercial, national security and exploration missions, we look forward to that relationship continuing well into the future.” —TORY BRUNO, President & CEO, United Launch Alliance



SLC-46: ORBITAL ATK MINOTAUR 4 LAUNCH

In August 2017, Orbital ATK (now Northrop Grumman Innovation Systems) launched its Minotaur 4 rocket from Space Florida's Space Launch Complex (SLC) 46 at the Cape Canaveral Spaceport. The launch of the ORS 5 mission for the U.S. Air Force (USAF) was the first launch from the pad since 1999.

It was a historic evening for the State of Florida, as this marked the first launch from the Cape Canaveral Spaceport's SLC-46 since the state invested more than \$6 million into upgrades and renovations. The Orbital ATK launch means that every operational U.S. vertical launch provider now has operations at the Cape Canaveral Spaceport. Over time, Space Florida has managed SLC-46 through a significant transformation, making the facility one of the most capable and adaptable at the Cape.

In 2010, Space Florida began an extensive two-phase renovation program to enhance the marketability of SLC-46 to a diverse set of prospective customers. The scope of this project included environmental studies as well as design and construction to modify existing systems as required to restore operational capability to support civil, commercial and military launch capabilities. A total investment of \$6.6 million was made by federal, state and local partners to provide for the upgrade of common use capability. Those modifications unique to the Minotaur were made by Orbital ATK.

In 2018, Space Florida continued upgrades to SLC-46 with the construction and installation of a new Lightning Protection System (LPS) over the pad, an investment worth \$3.5 million, which will be completed by the first quarter of 2019. This LPS will include catenary wires to expand the zone of protection over the processing and launch pad areas, enabling more robust coverage of personnel and launch vehicles from hazardous weather. It will also allow more responsive launch opportunities for Space Florida's customers.



SLC-46: ORION/NASA PARTNERSHIP



“

Cape Canaveral has been the embarkation point for more humans launched into space than anywhere else, and this agreement continues that legacy for the next generation of space missions.”

—JIM KUZMA, Senior Vice President
& General Manager, Space Florida

In December 2017, Space Florida announced its partnership with NASA's Johnson Space Center (JSC) in Houston, Texas for use of Space Launch Complex (SLC) 46 for the Orion spacecraft's Ascent Abort-2 test.

The landmark Sub-License Agreement gives JSC priority use of the launch complex for a specified period of time. The test is an effort to verify a key part of Orion's safety system during ascent to space before it begins missions with astronauts to deep space. The collaboration is an effort to enable and ready a key part of the Orion, America's next generation exploration vehicle, for human spaceflight by testing the abort system at the Cape Canaveral Spaceport.

SPACE X

In early 2018, SpaceX enhanced the State's competitive position with the successful launch of its Falcon Heavy rocket from Launch Complex (LC) 39A, followed by the landing of its two first-stage boosters.

With 27 Merlin engines and more than five million pounds thrust, the Falcon Heavy changes the landscape for global space launch and creates bold new capability for the Cape Canaveral Spaceport.

The Falcon Heavy's success is another SpaceX contribution to the future prosperity of the Cape Canaveral Spaceport.

In June 2018, SpaceX unveiled plans for expansion of rocket facilities at the Cape Canaveral Spaceport. Facilities would include a 300-foot launch control tower, a more than 130,000-square-foot rocket processing and storage facility and a rocket garden to display previously flown and historic space vehicles. Increased launch and landing cadence called for SpaceX to expand its operations.

At its June 2018 meeting, Space Florida's Board of Directors approved to committing up to \$14.5 million in Spaceports Infrastructure funding to support SpaceX's planned expansion, making another investment in SpaceX's future growth in the State of Florida.



SHUTTLE LANDING FACILITY

In 2015, Space Florida began operating the Shuttle Landing Facility (SLF), further promoting the Cape Canaveral Spaceport's transition to commercialization.

In PY2018, Space Florida announced the addition of aviation fueling to the SLF's list of services. In a competitive bid process, Space Florida awarded the fueling contract to Eastern Aviation Fuels, Inc. (EAF).

Previously, fueling was limited to government aircraft and not available to commercial customers. Under the EAF contract, Space Florida exceeded the goal of 100,000 gallons of fuel sold within the first 12 months of service. Fuel sales generate revenue for Space Florida operations at the SLF, and are necessary for increased activity and business at the SLF.

In September 2017, Space Florida published a Request for Bids for fuel farm storage of aviation fuels. The project was awarded to RUSH Construction, Inc., in October. The fuel farm will bring the SLF's fueling capacity to 30,000 gallons on site to support heavy lift, commercial and government-supported aircraft.

Notable activity for the SLF in PY2018 included two separate landings from Vice President Mike Pence and Air Force Two.



FDOT PARTNERSHIPS

Space Florida continues to work closely with the Florida Department of Transportation (FDOT) to enable growth at Florida's spaceports. FDOT's Aviation and Spaceports office oversees the planning, policy and execution of the Spaceport Improvement Program. With the incorporation of spaceports into the Florida Transportation Plan (FTP) and Space Florida's development of the Florida Spaceport System Plan, FDOT provides support and funding to Space Florida for high-priority spaceport projects through the Spaceport Improvement Program. This funding stimulates public and private investment into emerging and growing aerospace enterprises while advancing a safer and more secure spaceport transportation system. Since 2012, the Spaceport Improvement Program has deployed over \$150 million into Spaceport projects, matched by over \$500 million of private investment into Florida Spaceport Infrastructure.

BLUE ORIGIN

Blue Origin is constructing two new developments at the Cape Canaveral Spaceport to enable its *New Glenn Orbital Launch Vehicle*.

Construction of the 630,000-square-foot rocket manufacturing facility in Space Florida's Exploration Park began in May 2016. The office area of the facility was occupied in December 2017. Fit-out of the manufacturing portion continued throughout 2018 with full occupancy expected by year end.

Complete reconstruction of Space Launch Complex (SLC) 36 is underway at the Cape Canaveral Spaceport. Space Florida obtained a right-of-use for SLC-36 in 2008. Reconstruction activities include foundations for the launch pad, fuel tanks, underground infrastructure and an integration facility.

Blue Origin's project is a landmark for the State of Florida because it's the first time that rockets have been manufactured in Florida. Additionally, Blue Origin will refurbish its rockets for reuse locally, creating an integrated supply chain. Aerospace supply chain companies in Florida are already seeing significant new opportunities to equip Blue Origin with products, creating additional opportunities for economic growth and job creation.

Blue Origin expects to conduct the first launch of its *New Glenn* rocket in 2020.



FUELING INDUSTRY GROWTH IN FLORIDA—

THE EPICENTER OF AEROSPACE

Space Florida is endowed with statutory powers that enable a unique financing toolkit to support new and expanding aerospace companies. The toolkit combines favorable accounting treatment for new facilities, machinery and equipment, along with various tax efficiencies that enable the company to defer and defray costs associated with an expansion or relocation. Space Florida devotes considerable resources to maintaining active relationships with commercial banks and other sources of capital so that when an opportunity is presented we can move quickly to assist the expanding company. More than \$1 billion in assets has been financed by Space Florida in this manner, supporting the attraction and expansion of Florida operations by major prime contractors like Northrop Grumman, United Launch Alliance, Embraer and Delaware North Corporation.

In 2018, Space Florida broadened its efforts by expanding use of the financing toolkit to aerospace supply chain companies. The attraction and growth of significant prime contractor activity over the past few years has provided opportunities for supply chain companies to gain significant new business in Florida. Space Florida provided critical support that enabled two supply chain companies to make the investments needed to meet their new and expanded customer commitments.

GKN AEROSPACE - Based in the United Kingdom, GKN Aerospace is a multi-billion dollar tier one supplier of critical aerospace components. GKN established a 135,000-square-foot manufacturing facility in St. Joe Company's VentureCrossings Enterprise Center, which is adjacent to the Northwest Florida Beaches International Airport. GKN will provide components for a number of aerospace and defense systems from the facility. 170 highly skilled workers will be employed in the facility.

Space Florida played a key role in enabling GKN's expansion by securing \$27 million in conduit financing for acquisition of machinery and equipment. The financing was provided by Credit Agricole bank, which was an appropriate lender due to its expertise in cross-border financing transactions. The favorable accounting treatment and tax efficiencies gained through Space Florida's ownership of the assets in a conduit debt structure were critical in helping GKN provide cost competitive solutions to their customers. Space Florida worked with numerous



Space Florida's expertise in working with potential lenders was very valuable in assisting Matrix. We were able to secure financing to purchase equipment that will enable us to service new commercial accounts, highlighted by GE Aviation and Pratt Whitney. It is an exciting time for Matrix as we leverage our decades of expertise in working with complex composites and push into new products and markets. We are proud that the composite parts and structures that we make on Florida's Space Coast are utilized in military and civilian aircraft all over the world."

—DAVE NESBITT,
President, Matrix Composites, Inc.

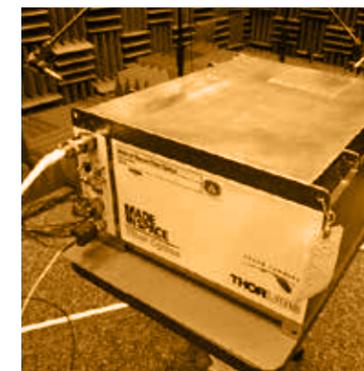
economic development partners, including the Bay County Economic Development Alliance, Enterprise Florida, Gulf Power and the St. Joe Company, in providing a comprehensive package to bring GKN to Bay County.

MATRIX COMPOSITES - Founded in 1993, Matrix Composites is a Rockledge, FL (Brevard County) based composites manufacturer that supplies complex composite structures to defense and commercial aerospace customers. Matrix Composites has achieved STAR Level Supplier status, a prestigious award made only to Lockheed Martin suppliers who distinguish themselves by meeting some of the most stringent performance and business systems criteria in the aerospace industry.

Additionally, Matrix has met the established criteria that evaluate quality, delivery, affordability and business management. Of Lockheed Martin's 60,600 suppliers, only 1 percent achieve this status.

Building upon its strong foundation of supplying defense prime contractors, Matrix sought to further expand its business into the commercial aerospace supply chain. Space Florida facilitated a \$2 million conduit financing transaction with Hancock Whitney Bank, which provided Matrix with needed capital to acquire new machinery and equipment, and expand its Florida operations from 29,000 to 40,000 square feet. This expansion will enable Matrix to engage in high-volume composite manufacturing to support GE's LEAP and GEnX engines, used on Boeing 737, 747 and 787 aircraft, and to also supply Pratt Whitney's NGPF engine. Matrix is expected to create 105 new jobs over the next three years.

MADE IN SPACE



Florida is one of the best states in the nation to do business. We have a thriving aerospace and defense industry, with many high-tech and engineering jobs being added. The state's lower tax rates, access to higher educational institutions, and cultural attractions make it a very enticing for companies to expand. Space Florida's considerable efforts and support have attracted significant commercial space activity to our state. Made In Space is proud to count them as a partner in our Florida, and space-based growth. The future looks exceptionally promising for economic development opportunities in Florida, and in space!" —MADE IN SPACE, INC.

MADE
IN SPACE

Made In Space, Inc., (MIS) extended its track record of strong revenue growth and technological innovation over the past year. MIS also grew its contract backlog. Via its Space Florida-supported ZBLAN manufacturing program, MIS produced the first exotic optical fiber in Low Earth Orbit (LEO). MIS believes that the manufacture of ZBLAN optical fibers and other space-enabled materials will be the foundation of sustainable commercial activity in LEO.

MIS also made significant progress in the development and market adoption of its Archinaut in-space manufacturing and assembly technology. Through development work with NASA, MIS has for the first time demonstrated manufacturing and assembly of large structures in a space-like environment. This is a key milestone for in-space manufacturing of satellite systems. Operational missions for Department of Defense and civil space customers are now in development.

FLORIDA VENTURE FORUM CAPITAL ACCELERATOR EVENTS

Space Florida continued its partnership with the Florida Venture Forum to strengthen its existing capital acceleration and small business development programs. In three separate capital acceleration events, Space Florida provided the Accelerating Innovation cash awards totaling \$200,000.

\$175M+
IN FUNDING &
INVESTMENTS



Florida Venture Forum is proud to partner with Space Florida to bring much needed early and growth stage capital to promising Florida companies, and give them unrivaled opportunities to network with active venture investors from Florida and across the US. The benefits to the Florida ecosystem have been huge—and will continue for years to come.”

—STANLEY G. JACOBS, JR., 2017-18 Chair of the Florida Venture Forum; Shareholder, Greenberg Traurig, PA.



2017 VENTURETECH SHOWCASE (EARLY STAGE)

Weintraus, Inc., and Tellus, Inc., were the grand prize winners at the 2017 VentureTech Showcase, held at the Florida Atlantic University Tech Runway in Boca Raton in November. A total of 17 Florida-based companies were selected to present. The two winning companies each received \$25,000 of Space Florida's \$50,000 Accelerating Innovation Award.

Weintraus, Inc., Daytona Beach (weintraus.com), has a mission to build a reusable and re-supply capable space tug having the ability of capturing, servicing, refueling and maneuvering multiple spacecraft in orbit. Weintraus aims to do this with Hercules' ability to scale into different markets from the same spacecraft platform.

Tellus, Inc., Deerfield Beach (4tellus.com), provides comprehensive solutions to extend healthcare beyond the hospital walls. Its tools are SaaS-based applications designed to help their clients leverage the use of mobility allowing patients to interact with providers without taking a trip to the hospital.

The 17 presenting companies were selected from a statewide pool of more than 70 applicants by a committee of active Florida venture capitalists and other investors.



2018 FLORIDA VENTURE CAPITAL CONFERENCE (GROWTH STAGE)

ITProTV was the grand prize winner of the 2018 Florida Venture Capital Conference, held at the Fort Lauderdale Marriott Harbor Beach Resort. A total of 17 Florida-based companies and one Rhode Island-based company from a variety of industry sectors were selected to present before an audience of investors, deal professionals and entrepreneurs.

A panel of judges reviewed each selected company's presentation and supporting materials. ITProTV received the grand prize Accelerating Innovation Award of \$100,000.

ITProTV, Gainesville (itpro.tv) delivers online IT training that is both comprehensive and entertaining. With a unique format where educators interact with hosts, ITProTV brings a human-to-human approach to the convenience and cost-efficiency of learning. ITProTV provides comprehensive training to the medical field as well as the federal level.

2018 FLORIDA VENTURE FORUM EARLY STAGE ANGEL CONFERENCE

Tomahawk Robotics and Gridics each received \$25,000 of Space Florida's \$50,000 Accelerating Innovation Award presented at the 2018 Florida Venture Forum Early Stage Angel Conference held in Tampa. A total of 19 Florida-based companies and one California-based company were selected to present and compete for the prize.



Tomahawk Robotics, Melbourne (tomahawkrobotics.com) has a broad set of skills/experience covering all aspects of mobile robotic systems. Tomahawk has expertise in designing and building hardware in the form of mobile robots (underwater/tracked/wheeled), walking robots, snake robots, and dual arm manipulation systems for US government and commercial customers (rugged, reliable, all-weather conditions).



Gridics, Miami (gridics.com) is short for Grid Analytics and is focused on developing groundbreaking applications for the real estate space. By combining disparate data sets with quantitative modeling and 3D renderings, Gridics delivers the tools and insights for cities and real estate professionals to enhance

their workflow. Whether one wants to quickly identify development opportunities or visualize large-scale planning and zoning decisions, Gridics will help save time and money.

To date, Space Florida-supported capital accelerators have attracted more than \$175 million in funding and investments for the participating companies.



The monetary support that Space Florida provided as part of the Grand Prize at the Florida Venture Forum was put to immediate use to buy test and engineering equipment for our business. We have been using this equipment since the day it showed up to support our current customers and grow the range of tasks we are able to execute on behalf of our customers.”

—BRAD TRUESDELL,
Tomahawk Robotics



FLORIDA-ISRAEL INNOVATION PARTNERSHIP FIFTH-ROUND CALL FOR PROJECT WINNERS

Space Florida, the aerospace and spaceport development authority for the State of Florida, and the Israel Innovation Authority, created to maintain Israel's position at the forefront of global innovation, announced the fifth-round winners of industrial research and development funding tied to the Florida-Israel Innovation Partnership Program.

\$2M
RECURRING
JOINT FUND

In October 2013, Florida and Israel created a \$2 million recurring joint fund to support research, development and commercialization of aerospace and technology projects that benefit both Israel and Florida. For this Call for Projects, in total, 14 joint proposals were submitted by teams of for-profit companies in Florida and Israel, and four teams were selected for the fifth round awards.

- 1 GAN CORPORATION (ORLANDO) & ASTRONAUTICA (ISRAEL)
- 2 PHERONYM (GAINESVILLE) & BIO-BEE (ISRAEL)
- 3 MADE IN SPACE (JACKSONVILLE) & NANO DIMENSION (ISRAEL)
- 4 SEMPLASTICS (OVIEDO) & POLYMERTAL (ISRAEL)

Also in PY2018, Space Florida partnered with the Japan External Trade Organization (JETRO) in hosting a matchmaking event between Japanese and Florida aerospace companies. The event was held immediately after the Southeast U.S. – Japan Association Annual Meeting, and Space Florida briefed the Japanese delegates on how Space Florida's toolkit can facilitate the establishment of operations in the state. Additionally, Space Florida hosted a delegation representing France's aerospace cluster regions. Space Florida anticipates continued collaboration with both Japan and France, with the potential someday of forming additional partnerships like Florida – Israel Innovation Partnership.



The Israel Innovation Authority-Florida partnership is an excellent example of a successful model for implementing a state-to-state agreement. This is being done thanks to the strengths both states offer. The partnership has resulted in high quality projects which produces tangible value to the Israeli companies. –ISRAEL INNOVATION AUTHORITY



SPACE FLORIDA'S SPACE LIFE SCIENCES LAB

Space Florida's Space Life Sciences Lab welcomed five new tenants in PY2018 to include:

- 1 BRPH
- 2 SPACEPHARMA, INC
- 3 AECOM
- 4 QUANTUM SPACE PRODUCTS
- 5 AQST SPACE SYSTEMS GROUP LLC



The Space Life Sciences Lab (SLSL) houses office and conference space, laboratories, controlled environment chambers and a dark room. It also provides convenient access to the Cape Canaveral Spaceport and launch providers.

The facility plays a critical role by allowing preparation of experiments immediately prior to SpaceX cargo flights to the International Space Station. The SLSL is also a key asset for numerous, smaller commercial launch providers that are expected to fly research in the coming years.

Techshot, Inc., a commercial spaceflight company headquartered in Greenville, Indiana, has been a tenant at the SLSL since November 2015. This year, Techshot expanded its operations at the SLSL.



Techshot has recently expanded its footprint at the SLSL, including a large office suite and a multifunctional wet laboratory. Three new employees were added to further broaden engineering and support capabilities. Local activities include mission integration and sustaining engineering for NASA's Advanced Plant Habitat (APH), continuing development of a second-generation space-rated plant watering system called the Passive Orbital Nutrient Delivery System (PONDS), and design for a seedling plant growth module called Phytofuge to be used on Techshot's own Multi-use Variable-Gravity Platform (MVP) research facility already resident on the International Space Station. For the upcoming SpaceX-16 flight, Techshot will process its first payload at the SLSL, a bacteriological experiment officially called Micro-13 but internally known as Exploring Virulence and Omics during Long-term Viability Experiments in Spaceflight (EVOLVES). EVOLVES will be performed in Techshot's Advanced Space Experiment Processor (ADSEP) facility on orbit and returned for postflight analysis."

—DAVE REED, Launch Operations Director



INDIE GALACTIC SPACE JAM

Space Florida has been proud to help showcase Florida's emerging Game Development industry through its participation in the Indie Galactic Space Jam over the past four years. Game development has become a unique technical skill set in demand within the aerospace industry over the last few decades, and is a talent highly sought by Elon Musk in the development of SpaceX.



Indie Galactic Space Jam each year grows larger and connects more and more of our community bridging the Space and Games & Digital Media industries within Florida. It's always exciting to see the creative and scientific process hard at work and all the prototypes come together in less than 48 hours. We're approaching our 5th year and since that time we've had over 100+ rapid prototypes, five commercial projects, several attendees hired, new companies formed and several contracts awarded all as part of the serendipity of the event. We can't wait to see what new innovations come next." —KUNAL PATEL, Space Jam organizer



More than 100 people and 15 teams came together for the Jam in Orlando on September 28 through October 1, 2017. The weekend-long event, hosted by Indienomicon at the Digital Animation and Visual Effects (DAVE) School at Universal Studios in Orlando, is a collaboration for game designers, writers, programmers, animators, artists and anyone interested in game development.

The Indie Galactic Space Jam featured a chance to pitch an idea, build a game and present the product with fellow game enthusiasts from Central Florida and beyond. The goal was to produce a space-themed playable game prototype. At the end of the 48-hour Space Jam, teams presented their games to a panel of judges for a chance to win part of a \$5,000 cash prize provided by Space Florida. The event's continuing success is evidence of Florida's growing expertise in the field of game development.

Winners of the Annual Space Florida Challenge at the 2017 Indie Galactic Space Jam were Tootin' Pooches, Super Fulfillment Funtime, Jigsaw Planet, C02L0NY, Pugs in Space and Intern Stellar. Participants traveled from across Florida as well as out of state from places such as Seattle, Washington D.C., Savannah and Charleston.

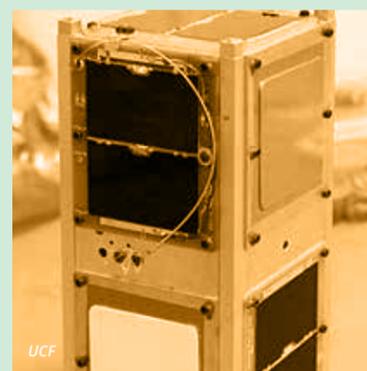
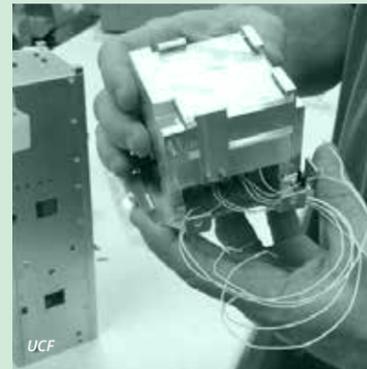
THE UNIVERSITY OF CENTRAL FLORIDA (UCF) CENTER FOR MICROGRAVITY RESEARCH

Established through joint funding from Space Florida and UCF, the goal of the Center is to grow the space science enterprise in the State of Florida by establishing and building microgravity research including ground-based and space-based science and payloads. A robust microgravity science capability is essential to positioning Florida to design, build, test, validate and fly flight hardware systems into space that will ultimately result in economic growth and job creation down here on Earth.

This research promotes Florida's leadership in emerging aerospace technologies, addresses workforce development issues and enhances the technological competitiveness of Florida universities and the aerospace industry. This investment has enabled the successful competition for larger sponsored research awards and has produced technologies that have led to commercial opportunities. It has also attracted and leveraged other federal or industry funding.

In PY2018, the Center supported the successful Florida Space Institute-led proposal to National Science Foundation (NSF) to assume management of the Arecibo radio telescope in Puerto Rico.

Additionally, the Microgravity Center is involved in the building of the Q-PACE CubeSat, slated for launch aboard Virgin Orbit's LauncherOne rocket; the SurfSat CubeSat, in partnership with the NASA-KSC Launch Services Program Office, the SPACE-2 payload for suborbital flight with the Exos Aerospace company, a payload package to Virgin Galactic for a payload flight on SpaceShipTwo, as well as a payload package to Blue Origin for a payload flight on the New Shepard vehicle. The Center is also working with scientists in Germany to collaborate on an Earth-orbiting satellite that will be primarily funded by the German Space Agency (DLR) to study planet formation.



FLORIDA SPACE GRANT CONSORTIUM (FSGC)

The Florida Space Research Program (FSRP) is a jointly funded initiative by the NASA Florida Space Grant Consortium (FSGC) and Space Florida. Founded in 2007, the FSRP combines federal and state funds for projects that diversify Florida's aerospace industry and research efforts, while also supporting aerospace workforce development statewide.

In PY2018, Space Florida and the FSGC funded 14 space technology and education research projects from the University of Central Florida, Florida A&M University, Embry-Riddle Aeronautical University, Florida Polytechnic University, Florida Institute of Technology, University of Miami, University of Florida and University of North Florida.

THE PROGRAM IS COMPRISED OF THREE CATEGORIES:

Space Education and Training Program (SETP)

Space Exploration and Spaceport Technical Development (SESTD)

Space-Based Research and Payload Development (SRPD)

\$8M+
**STATEWIDE
ECONOMIC
IMPACT**

Since FSRP was founded, Space Florida has made a total investment of more than \$1 million for a statewide economic impact of more than \$8 million, and 12 different Florida universities have been among the awardees.

Funding received by winners is intended to support research that will promote Florida leadership in emerging aerospace technologies, address workforce development issues, enhance the technological competitiveness of Florida universities and the aerospace industry, compete for larger sponsored research awards, produce technologies that lead to commercial opportunities and attract and leverage other federal or industry funding.

WORKFORCE CHALLENGE

The demand for skilled technical talent has been a national challenge confronting U.S. economic competitiveness for many years. Because of the success Florida has had recently in recruiting new aerospace industries, that problem has become much more acute, particularly on the Space Coast. With the arrival of Blue Origin, OneWeb Satellites, Northrop Grumman, Embraer and Lockheed Martin's Fleet Ballistic Missile programs, there has developed an ever-growing collaboration between industry and Florida's universities and public school systems across the state. Space Florida has stepped into the role as a catalyst by hosting Workforce Workshops and teaming with others in similar efforts. The fruits of that effort have not only highlighted the problem but have resulted in tangible progress.

Space Florida has facilitated the formation of new entities such as the Space Coast Consortium to pursue new Apprenticeship programs, it has connected different industries to pursue innovative solutions to the crisis of obtaining timely security clearances demanded of defense contractors, and working to address the surprising but genuine reluctance public school systems confront in the promotion of advanced manufacturing careers in middle and high schools.

The workforce challenge is one most any community in the country would love to have, but to maintain our competitive edge it will require further creativity and innovation.



RUAG Space USA selected Titusville for one of our U.S. expansions because of its strategic location which allows us to directly connect to our customers and continue to expand our commercial space market. Establishing a new presence is always a challenge, particularly in securing a qualified and diverse workforce with the critical skills necessary to succeed. Space Florida has been a true partner—a key driver in this process—diligently working with us to help champion collaborations between RUAG Space USA and others to meet our customers' requirements."

—MIKE MORNINGSTAR,
President of RUAG Space USA

RUAG

Aerospace Defence Technology



SPACE FLORIDA IS MORE ENGAGED IN WASHINGTON, DC THAN EVER BEFORE.

In June 2017, President Trump signed an executive order reconstituting the National Space Council (NSpC).

The Council is chaired by Vice President Pence and includes the Secretaries of State, Commerce, Transportation, and Homeland Security, as well as the heads of the Office of Management and Budget, the National Security Advisor, Director of National Intelligence, NASA Administrator, Deputy Secretary of Defense, Deputy Chief Technology Officer, and the Vice Chairman of the Joint Chiefs of Staff. The NSpC aims to ensure coordination between civil, commercial, and national security space priorities. Since its reconstitution, the Council has held three meetings, including one in February at the Kennedy Space Center. The evening prior to that meeting, Vice President Pence and Air Force Two landed at Space Florida's Shuttle Landing Facility ahead of a reception in honor of the National Space Council. The reception was held under the Space Shuttle Atlantis at the Kennedy Space Center Visitor Complex, and was hosted by Space Florida, and co-sponsored by the Commercial Spaceflight Federation, the Coalition for Deep Space Exploration, Aerospace Industries Association and the America Institute of Aeronautics and Astronautics.

The NSpC has also released three Space Policy Directives (SPDs), requiring studies aimed at improving regulatory streamlining, space situational awareness and space traffic management, among others. In addition to the Space Council, NASA established a Users' Advisory Group (UAG) to gather and report perspectives from non-federal aerospace organizations to the National Space Council. Included in the UAG membership is former Speaker of the Florida House of Representatives Steve Crisafulli, who is acutely aware of the state's role in facilitating the growth of the aerospace industry.

In April 2018, Jim Bridenstine was sworn in as the 13th Administrator of the NASA. Prior to this role, Bridenstine represented Oklahoma's First Congressional District in the U.S. House of Representatives, where he was well-known as a champion for space, serving on the Armed Services Committee and the Science, Space and Technology Committee.

Along with the administration's leading role in space, Capitol Hill has been very active in the formulation of new space policy, working on several pieces of impactful legislation, including passage and signing of the first NASA Authorization bill in seven years.



NATIONAL SPACE COUNCIL

In February, Vice President Mike Pence chaired the second meeting of the National Space Council at John F. Kennedy Space Center's Space Station Processing Facility (SSPF) at the Cape Canaveral Spaceport. The role of the Council is to strengthen the United States' leadership in space.

The meeting, entitled, "Moon, Mars, and Worlds Beyond: Winning the Next Frontier," included testimony from senior representatives from civil, commercial and national security space. The meeting addressed issues including regulatory, acquisition and export control reform, as well as space traffic management and spectrum. The Users' Advisory Group is comprised of 29 individuals who will help to "foster close coordination, cooperation, and technology and information exchange" across the U.S. space enterprise.

"We were pleased to welcome Vice President Pence and members of the National Space Council to Florida and the Cape Canaveral Spaceport, the unequivocal leader in space exploration," said Space Florida President and CEO Frank DiBello. "Recent commercial successes such as the SpaceX Falcon Heavy reinforce the importance of the National Space Council and its efforts in promoting America's leadership in space exploration. I was especially encouraged by Vice President Pence's assertions that this administration will encourage the government to be a partner and customer, rather than a competitor, and to be a tenant not a landlord in the future. I look forward to further engaging with the Council."

Vice President Pence and Air Force Two landed at Space Florida's Shuttle Landing Facility ahead of a reception in honor of the National Space Council. The reception was held under the Space Shuttle Atlantis at the Kennedy Space Center Visitor Complex, and it was co-sponsored by Space Florida, the Commercial Spaceflight Federation, the Coalition for Deep Space Exploration, the Aerospace Industries Association and the America Institute of Aeronautics and Astronautics.

ARC/FAA TOUR

In response to the Washington's effort to support the growth of commercial space market, the Federal Aviation Administration (FAA) developed three new Advisory and Rulemaking Committees (ARCs) to address some of the new challenges arising from this rapidly evolving industry.

Space Florida's recognized leadership in that market enables it to provide reliable input and insight into the deliberations of those ARCs. That included hosting and touring the Airspace Access Priorities ARC throughout the Cape Canaveral Spaceport—the location in the country where the issue of airspace access for commercial space meets reality more than anywhere on the planet. Additional ARCs address the issue of *Spaceport Categorization* and one promotes Streamlining Launch and Reentry Licensing. These ARCs also seek Space Florida's perspective and experience.



The opportunity to participate in the National Space Council's Users' Advisory Group provides Florida a critical voice in the development of the nation's space policy for the future. During my time in the Florida Legislature we fought hard to position the state as the unquestioned leader in the emerging commercial space industry through our investment in Space Florida. It is my hope that by representing Florida in the advisory group we will only strengthen Florida's commanding position."

—STEVE CRISAFULLI, Member of User Advisory Group to the National Space Council & Former Speaker of the Florida House of Representatives

MAKE SPACE PART OF YOUR EPIC FLORIDA VACATION

In PY2018, Space Florida, in partnership with Paradise Advertising and Marketing, Inc., continued its international multi-media campaign to promote Florida as the rocket launch capital of the world with the consumer-facing space tourism brand “We Are Go.”



The “Vacationauts” campaign is a national, award-winning multimedia campaign with television, print, email, public relations, digital and social components.

This year, we continued to expand on the Vacationauts campaign by focusing on the Path of Totality, the total solar eclipse on August 21, 2017. This even provided a great opportunity to reach out to space enthusiasts around the nation.

THE DEMOGRAPHICS: Audience 18+

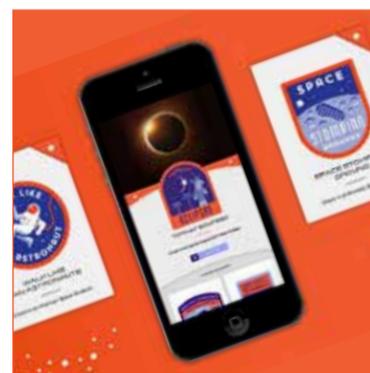
THE KEY MARKETS ALONG THE PATH OF TOTALITY:

- Atlanta, GA
- Nashville, TN
- Kansas City, MO
- Charleston, SC
- St. Louis, MO
- Lincoln, NE

The campaign included digital display advertising, new polls and quizzes in our app along with special Totally Eclipsed Badges that could be earned only on the day of the eclipse.

The Path of Totality campaign included a focus on digital radio with 30- and 60-second radio spots played between 7am and 3pm on the day of the solar eclipse.

The campaign also had a unique element of a promoted Snapchat filter around the country, both inside and outside the Path of Totality, some locations performed better than others. Among the successful locations was Vanderbilt University in Nashville, Tenn., where there was an 11% usage rate, earning more than 24,000 views on 564 uses. Additionally, Charleston earned a total of 16,619 combined views.



RESULTS DELIVERED



UNIQUE PRESS KIT

To announce the Path of Totality campaign, unique press kits were sent out with a commemorative poster for the Solar Eclipse and a Total Eclipse Simulator

These award-winning campaigns have continued to pull in more national awards this year.

HSMIA ADRIAN AWARDS

Platinum:

- Vacationaut Campaign

Gold:

- Vacationaut Email Series
- Vacationaut: Great American Eclipse Radio
- Vacationaut: USA Today Print Ad
- Vacationaut Kit

Silver:

- Vacationaut Public Relations Campaign
- Vacationaut Digital Campaign

Bronze

- Vacationaut Takeover
- Vacationaut Social Media
- Vacationaut Posters

2018 FLAGER AWARDS

RADIO ADVERTISING

Silver:

- Vacationauts Path of Totality Radio Promotion

DIRECT MARKETING

Silver:

- Vacationauts Eclipse Simulator





LOOKING AHEAD

This past year marked yet another extraordinary year for the growth of the Cape Canaveral Spaceport and the aerospace industry in the state. The spaceport is well on its way to becoming the world's premier space transportation hub as well as the global leader in enabling space commerce.

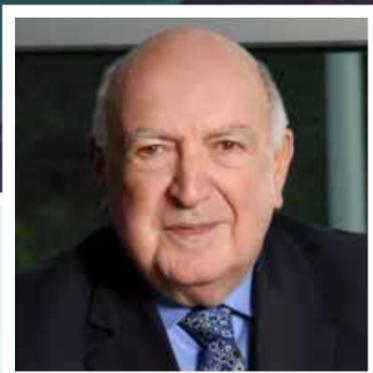
Over the past five years, we have made great progress in modernizing and re-purposing legacy Air Force and NASA spaceport infrastructure. Now, all facilities that could be re-purposed are finished, and our focus for the next decade is to build the capacity of the Cape Canaveral Spaceport with new infrastructure, to handle a new commercial future, one that serves space exploration, national security and space commerce.

Florida's Spaceport System is poised to lead the world in this next space era, one that reflects the transition from a government-led and focused industry to a busy commercial market-driven one, which supports government missions as customers. We are planning new logistics, utilities, consumables and support facilities to handle a future environment which will see over 100 launches a year from the Cape, with horizontal and vertical launches and landings of rockets and spacecraft, manned spaceflight by both government and civilian astronauts, and a new era of space exploration, commerce, trade, research and manufacturing in Low Earth Orbit and beyond!

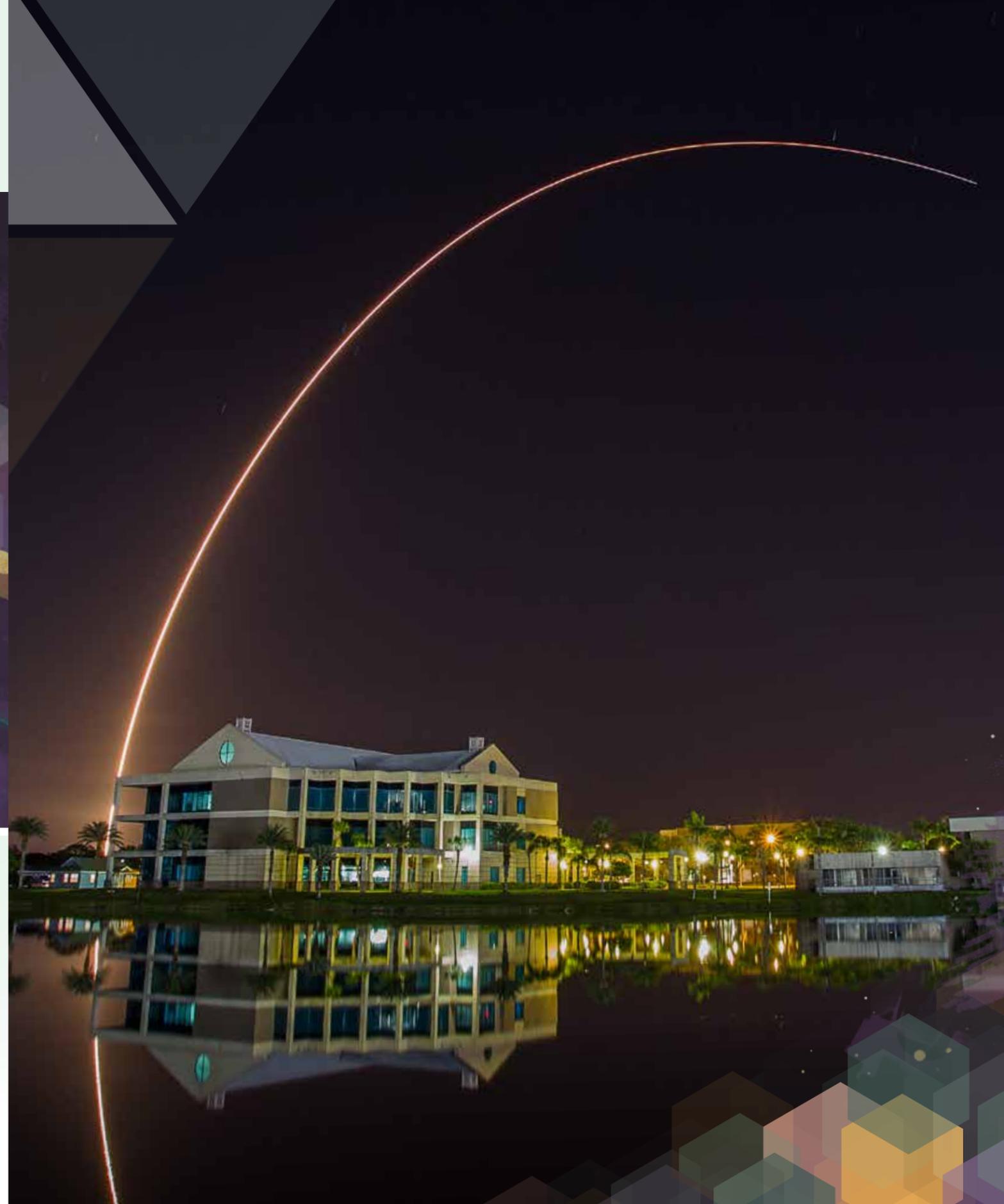
This will mean dramatic changes for our space community as well. By next year, we will see over 1,000 new workers at Exploration Park. Statewide, we are seeing a growing recognition within the global aerospace industry that Florida has the kind of business operating and living environment that next generation aerospace development and manufacturing companies need to thrive in, and they are expanding or relocating here in large numbers.

Our communities must also evolve to build the next-generation of transportation, housing and community infrastructure to support this increasingly important segment of Florida's economy.

Florida and the Cape Canaveral Spaceport are well-positioned to dominate the future of this industry and lead the world in enabling space commerce and innovation. Space Florida will continue to work with the state's leadership to carefully invest in this bright future!



FRANK DIBELLO
President & CEO,
Space Florida



SPACE FLORIDA



SPACE FLORIDA

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